

Forest Utilization Policy in Indonesia in Improving Environmental Carrying Capacity

Nurikah

*Administrative Law Department, University of
Sultan Ageng Tirtayasa
Serang, Banten, Indonesia
nurikahgurnadi@gmail.com*

Ferina Ardhi Cahyani

*Administrative Law Department, University of
Sultan Ageng Tirtayasa
Serang, Banten, Indonesia
ferinaac@untirta.ac.id*

Abstract—*Environmental Problems are an undisputed issue both in Indonesia and in the world. The big and important issue of the environment makes United Nation launch the Sustainable Development Goals. One of them is about life on land, including forest. Indonesia, which was once dubbed as the lungs of the world, has now declined in quality. In 2016, research conducted by Indonesia Forest Watch announced that forests in Indonesia were reduced by one time the size of a football field every hour. Based on the 1945 Constitution of the Republic of Indonesia Article 33 paragraph (3) states that "earth and air and natural resources are contained in an environment controlled by the state and used to achieve massive prosperity of the state", so that it has been adjusted to forest needs so that it becomes a matter that needs attention. In Law No. 41 of 1999 concerning Forestry also has an opinion about forests that have benefits for life both in terms of ecology, socio-cultural, and economic. The research method used is the national research method, where the author uses legislation, books, and other literature as the main source. With this fulfillment, it is hoped that it will be able to create new policies that can provide benefits and changes to the condition of forests in Indonesia so that one of the objectives of the Sustainable Development Goals can be realized and the carrying capacity of forests can increase.*

Keywords—*forestry, sustainable development, environmental carrying capacity.*

I. INTRODUCTION

Indonesia is an archipelago which has 17,504 islands. The total area of Indonesia which reaches 1,913,578.68 km² is divided into land and sea areas [1]. The territory of Indonesia covers the territorial waters, the seabed, and the land beneath it and the air space above it, including all sources of wealth contained in it, this is in accordance with Article 4 of Law Number 43 of 2008 concerning the State Territory. Discussing about the land area of Indonesia, Indonesia has one of the natural resources found on land, namely forests. Forests in Article 1 point 2 of Act Number 41 of 1999 concerning Forestry is an ecosystem unit in the form of a stretch of land containing biological natural resources which are dominated by trees in the fellowship of their natural environment which cannot be separated from one another. Forests are also one of the determinants of life support systems and a source of people's prosperity. The area of Indonesian's forest in 2017 is 120,773,441.71 hectares [1].

Population growth which has increased every year causes the needs of life to increase. Basic human life needs such as clothing, food, and shelter still rely on forest areas as the main way to meet these needs, by converting forests as settlements to industrial estates [2].

Deforestation without reforest or replant in deforested forest areas will cause the increasing of the flow of water on

the surface that can cause flooding. If forest cover is reduced continuously without rehabilitation, it will have an impact on the decline in the carrying capacity of the forest to the environment.

A. Forest Degradation

As mentioned above, the forest is an ecosystem unit in the form of expanses of land containing biological natural resources which are dominated by trees in the fellowship of their natural environment which cannot be separated from one another. A general explanation of Law No. 41 of 1999 concerning Forestry explains that forests have real benefits for the life of the Indonesian people, both ecological, socio-cultural and economic benefits. In its position as one of the determinants of the life support system, forests have provided great benefits for humanity, therefore their preservation must be maintained. Forests have a role as a harmonizer and balancer of the global environment, so that their relevance to the international world becomes very important, while still prioritizing national interests.

Indonesia's tropical forests according to National Forestry Plan (RKTN) data for 2011-2031 are 130.68 million hectares (Direktorat Perencanaan Kawasan Hutan-Multistakeholders Forestry Programme, 2012). This is the third largest tropical rainforest after Brazil and Congo. The tropical forest in fact suffered considerable damage. About 130,000 km² (the size of the United Kingdom) every year Indonesia's forests are damaged [3].

Forests have been converted into land for settlements, agriculture, mining, roads, and so on. The existence of human activities as described above has an impact on forests, one them is deforestation. Deforestation in Article 1 number 10 of the Forestry Minister's Regulation Number: P.30/Menhut-II/2009 concerning Procedures for Reducing Emissions from Deforestation and Forest Degradation (REDD), is a permanent change from forested areas to non-forested caused by human activities. To be able to find out how much forest is from year to year, it is necessary to calculate deforestation rates. Deforestation rates can increase or decrease in each period. This is due to the very dynamic changes in land cover due to human activities in utilizing land, resulting in loss of forest cover or additional forest cover due to planting [4].

Forest Watch Indonesia (FWI) stated that up to 2013 the area of natural forest cover in Indonesia was 82 million hectares or around 46% of Indonesia's land area. Percentage of natural forest cover compared to land area in each island up to 2013, sequentially, Papua is about 85 percent of its

land is still natural forest, Maluku 57 percent, Kalimantan 50 percent, Sulawesi 49 percent, Sumatra 24 percent, Bali-Nusa Tenggara 17 percent, and Java 5 percent [5].

The legal regulations Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia states that the earth and water and natural resources contained therein are controlled by the state and used for the greatest prosperity of the citizens. The article is in accordance with Article 3 of the Forestry Law where the implementation of forestry aims to maximize the prosperity of the people that sustainable. Both of the articles also in accordance with the principle of operation of the national economy which is togetherness, efficiency with justice, sustainability, environmental friendliness, independence, and balancing progress and national economic unity (Article 34 paragraph (4) of the 1945 Constitution).

Although forests are permitted to be used for economic purposes, their implementation must be in accordance with the higher principles. Forest that has not observing the principles of sustainable forest would result in reduced functionality. Illegal logging will reduce the function of the forest as a water barrier. As a result, the carrying capacity of the forest is reduced. In addition, deforestation can cause flooding and erosion. Another result is the emergence of tigers, wild pigs, and snakes in the middle of human settlements due to the increasingly narrow habitat of these animals.

The carrying capacity of the environment is the ability of the environment to support human life, other living things, and balance between them. The carrying capacity of the forest will decrease if deforestation continues, even though the rules regarding the use of forests already exist in Article 3 of Law Number 41 of 1999 concerning Forestry [6], that is: guarantee the existence of forests with sufficient area and proportional distribution;

- a. optimize the various functions of the forest which include conservation functions, protected functions, and production functions to achieve balanced of sustainable environmental, social, cultural and economic benefits;
- b. increasing carrying capacity of watersheds;
- c. improve the ability to develop capacities and empowerment of communities in a participatory, equitable, and environmentally-friendly so as to create social and economic resilience and resistance to due to external changes; and
- d. ensuring equitable and sustainable distribution of benefits.

Forests are not evenly distributed in the region of Indonesia due to the difference of carrying capacity of each region. Forest's use should be a matter that must be taken seriously. When trees in the forest are cut down a lot, it will affect the condition of the soil in the forest. If the surface flow increases but there is no tree root that holds back the rate of water then surface flow will occur by carrying along the soil layer. If it occurs in a long period of time, the nutrients in the soil will disappear, even worse there will be floods and landslides. Drought will also occur because the water catchment area is getting smaller.

It takes a long time to restore the carrying capacity of the forest as usual. "tree growth and forest dynamics are also affected by factors other than climate, such as soil water and nutrient availability" [7]. Management of urban forests for carrying capacity means management that it is in accordance with the resolutions on sustainable forest management, use and protection of forests, and on the conservation of forest biological diversity [8].

To increase the carrying capacity of forests, it can be carried out through the implementation of REDD. Success or failure of REDD is influenced by several factors, including [9]:

- a. balance of strength among stakeholders
- b. harmonization between various policy sectors and interests
- c. sustainable forest management
- d. the ability of regional policies and local projects to consider climate adaptation
- e. technical and political challenges in clarifying land tenure
- f. recognition of forest community rights

Conditions of environmental degradation and declining capacity of the environment in line with the decline in the quality and authority of the law in the future concern for the environment should be protected by the law itself. In addition, the strengthening of investment, especially in the context of increasing Regional Original Income (PAD) also has an impact on the environment. At present the public trust is also experiencing a crisis, community control over development is also small. If this continues, it will result in ecological disasters in both forest and urban areas [10].

State forest control as stipulated in Article 33 paragraph (3) of the 1945 Constitution authorizes the government to regulate and manage everything related to forests, forest areas and forest products, regulate and establish legal relations between people and forests or forest and forest products, and regulating legal actions regarding forestry. The government also has the authority to give permits and rights to other parties to carry out activities in the forestry sector. But in reality, state forest control does not provide clear authority. The Constitutional Court in its various decisions examining laws and regulations related to state control has limited and simultaneously expanded the scope of the meaning of state control, which includes 5 functions of authority:

- a. Authority to make policies (beleid);
- b. Authority to make arrangements (regelendaad);
- c. Authority to carry out arrangements (berstuursdaad);
- d. Authority to carry out management (beheersdaad); and
- e. Authority to conduct supervision (toezichtsdaad).

In reality, the Constitutional Court's interpretation of the meaning of state control over forests and other natural resources still depends on the legal politics imposed by the government on forests and other natural resources. The politics of the law itself has so far not been oriented to the principles of agrarian reform and natural resource management [11].

B. Environmental Carrying Capacity

Article 1 number 7 of Act Number 32 of 2009 concerning Environmental Protection and Management states that environmental carrying capacity is the ability of the environment to support human life, other living things, and balance between the two. The carrying capacity of the environment is used as the basis for the utilization of natural resources together with the capacity of the environment [12]. The use of natural resources is carried out by taking into account several things:

- a. Sustainability of environmental processes and functions
- b. Sustainability of environmental productivity, and
- c. Safety, quality of life, and people's welfare.

Environmental carrying capacity is stated in the Strategic Environmental Assessment (KLHS). KLHS is one of the instruments to prevent pollution and / or environmental damage that must be owned by the government and regional government. KLHS is used to ensure that the principle of sustainable development has become the basis and integrated in the development of a region, policies, plans and programs. If the results of the KLHS state that the carrying capacity and capacity have been exceeded, the development policies, plans and programs must be corrected.

Increasing or decreasing environmental carrying capacity is influenced by many factors. One of the influencing factors is the implementation of the principle of sustainable development. The principle of sustainable development in Article 1 point 3 of Act Number 32 of 2009 concerning Environmental Protection and Management is a conscious and planned effort that integrates environmental, social and economic aspects into development strategies to ensure the integrity of the environment and safety, capability, welfare, and quality of life of present and future generations [12]. According to Andreas Pramudianto sustainable development is still relatively new and developing in international law [13]. International agencies, experts and other stakeholders have been involved in developing the concept of sustainable development through the process of forming international customary law. Thus after becoming international customary law, countries will consider making international customary law in force with full attachment through international agreements. Maintaining the Integrity of the Specifications

The template is used to format your paper and style the text. All margins, column widths, line spaces, and text fonts are prescribed; please do not alter them. You may note peculiarities. For example, the head margin in this template measures proportionately more than is customary. This measurement and others are deliberate, using specifications that anticipate your paper as one part of the entire proceedings, and not as an independent document. Please do not revise any of the current designations.

II. CONCLUSION

The condition of forests in Indonesia is currently experiencing severe deforestation and degradation. The numbers continue to rise, thus reducing forest cover rates.

Such conditions can result in a decrease in environmental quality and threaten biodiversity. This can happen if the carrying capacity of the forest can no longer support the lives of humans and other living things. If the carrying capacity of the forest decreases due to destructive activities such as logging that are not guided by the principle of sustainable development, then it can be ascertained that the carrying capacity of the forest will be critical. Forest carrying capacity must be maintained so that the forest can still function as one of the determinants of the life support system.

III. SUGGESTION

The government and regional governments must synchronize the laws and regulations so it will not overlap. Forest clearing activities should be studied more so that the carrying capacity of the forest does not diminish. The carrying capacity of the forest must be maintained so that the existence of forests can continue to be enjoyed by both the generations that live today and in the future.

REFERENCES

- [1] Badan Pusat Statistik. (2017). *Luas Daerah dan Jumlah Pulau Menurut Provinsi, 2002-2016*. Badan Pusat Statistik, Indonesia: Badan Pusat Statistik Indonesia. Retrieved July 28, 2019, from <https://www.bps.go.id/statictable/2014/09/05/1366/luas-daerah-dan-jumlah-pulau-menurut-provinsi-2002-2016.html>
- [2] Reni Ekawaty, Y. E. (2018). Telaahan Daya Dukung dan Daya Tampung Lingkungan dalam Pengelolaan Kawasan Daerah Aliran Sungai di Indonesia. *Journal of Applied Agricultural Science and Technology*, 2, 30-40.
- [3] Purnomo, A. (2012). *Menjaga hutan kita: pro-kontra kebijakan moratorium hutan dan gambut*. Jakarta: Kepustakaan populer gramedia.
- [4] Kementerian Lingkungan Hidup dan Kehutanan. (2018). *Data dan informasi pemetaan tematik kehutanan Indonesia*. Kementerian Lingkungan Hidup dan Kehutanan. Retrieved July 14, 2019, from <http://appgis.dephut.go.id/>
- [5] Forest Watch Indonesia. (2018). *Deforestasi tanpa henti "potret deforestasi di Sumatera Utara, Kalimantan Timur dan Maluku Utara"*. Bogor: Forest Watch Indonesia. Retrieved from <http://fwi.or.id/>
- [6] Undang-Undang Nomor 41 Tahun 1999 tentang Kehutanan
- [7] Ouimet, L. D. (2009). Relationships between Structure, Composition, and Dynamics of the Pristine Northern Boreal Forest and Air Temperature, Precipitation, and Soil Texture in Quebec (Canada). *International Journal of Forestry Research*, 1-13. Retrieved from <https://www.hindawi.com/>
- [8] Trakolis, D. (2003). Carrying Capacity - An Old Concept: Significance for the Management of Urban Forest Resources. *National Agricultural Research Foundation (NAGREF)*, 58-64. Retrieved from <http://www.iamb.it>
- [9] Muhammad Zahrul Muttaqin, I. A. (2019). Developing community-based forest ecosystem service management to reduce emissions from deforestation and forest degradation. *Forest Policy and Economics*, 1-9.
- [10] Handayani, I. G. (2009, June). Penegakan hukum kehutanan dalam rangka antisipasi dampak climate change di Indonesia. *Mimbar Hukum*, 21(2), 371-379.
- [11] Tim Analisa dan Evaluasi Peraturan Perundang-Undangan di Bidang Kehutanan. (2015). *Analisa dan Evaluasi Peraturan Perundang-Undangan di Bidang Kehutanan*.
- [12] Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup
- [13] Pramudianto, A. (2017). *Hukum Lingkungan Internasional*. Jakarta: Rajawali Press.